REMARKS

Claims 1-5 are currently pending in the present application. Applicants respectfully request reconsideration on the merits in view of the following arguments.

Rejections under 35 U.S.C. 102

Claims 1-5 stand rejected as being anticipated by USP 5,647,917 to Oida et al. (hereinafter "Oida").

Claims 1-5 stand rejected as being anticipated by USP 5,434,100 to Nakamura et al. (hereinafter "Nakamura").

Applicants respectfully traverse the outstanding rejections.

The presently claimed invention is directed to a compound semiconductor substrate for epitaxial growth, wherein the haze is not more than 2 ppm all over an effectively used area of the substrate, and an off-angle with respect to a plane direction is 0.05 to 0.10°. (emphasis added). According to the above configuration, both conditions of "the haze is not more than 2 ppm" and "an off-angle is 0.05 to 0.10°" are simultaneously satisfied. Thus, the presently claimed invention results in an epitaxial layer having unexpectedly superior surface morphology.

However, neither of Oida nor Nakamura discloses the requisite limitations of the presently claimed invention regarding the haze. In this context, the Examiner states in pages 2 and 3 in the Office Action that both Oida and Nakamura disclose a certain amount of dislocations of the epitaxial substrate and mirror polishing. Thus, the Examiner takes the position that "there would not be any haze due to reflection from roughness." However, Applicants respectfully disagree with the Examiner's position.

Those of ordinary skill in the art recognize that the generation of haze is primarily caused by two reasons: (i) the quality of the crystal which is to be the substrate, determined for example by the dislocation, and the like; and (ii) the quality of the finishing processing of the substrate, determined for example by the mirror polishing, and the like. Notably, unless both qualities satisfy certain expected levels, the presently claimed condition of "the haze is not more than 2 ppm" cannot be achieved.

Applicants wish to point out to the Examiner that the techniques disclosed in Oida and Nakamura are both approximately 10 years older than that of the present invention. Thus, the "usual" methods of production and polishing applied to the claimed substrate (page 2 in the Office Action) are different from methods applied at the time of the cited references.

In fact, Applicants respectfully submit that the research for reducing the haze by improving the quality of the mirror polishing did not begin until around the mid-1990's. Further, the mirror polishing methodology sophisticated enough for the substrate to realize "the haze is not more than 2 ppm" was not practiced before the 2000's. Accordingly, Applicants respectfully submit that the condition of "the haze is not more than 2 ppm" cannot have been achieved in either of Oida or Nakamura.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

In the present instance, neither of Oida nor Nakamura expressly teaches each and every element as set forth in the claims. This fact is apparent in light of the Examiner's comments in the Office Action, at page 3, the third paragraph, wherein the Examiner attempts to explain his assumptions regarding the teachings of Oida and Nakamura. Thus, Oida and Nakumura fail to properly anticipate the presently claimed invention because the references do not expressly teach all of the requisite features of the present invention.

Moreover, Applicants respectfully submit that neither of Oida nor Nakamura inherently teach each and every element as set forth in the claims. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). The rationale provided by the Examiner does not tend to support that Oida and Nakumura necessarily possess the requisite features of the presently claimed invention, as is required to support an anticipation rejection.

In the event that the Examiner maintains the outstanding rejection, Applicants respectfully request that the Examiner provide further comments as why the missing descriptive matter is necessarily present in Oida and Nakamura.

In view of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections.

Rejections under 35 U.S.C. 103

Claims 1-5 stand rejected as being obvious over Oida and Nakamura in view of US Patent Publication 2004/0214407 to Westhoff et al. (hereinafter "Westhoff"), USP 4,846,927 to Takahashi (hereinafter "Takahashi"), USP 7,304,310 to Shortt et al. (hereinafter "Shortt") and "Born and Wolf" (hereinafter "Born").

Applicants respectfully traverse.

The remarks above in the context of the discussion of the rejections under 35 U.S.C. 102, are likewise applicable to the outstanding rejection. Additionally, Applicants respectfully submit that none of Westhoff, Takahashi, Shortt, or Born serves to cure the noted deficiencies of Oida and Nakamura.

Applicants wish to point out that the present invention focuses on the microroughness in the surface of the epitaxial layer, which is not addressed by the cited prior art references. In fact, none of the cited references disclose nor suggest the relationship between (i) the haze and the off-angle of the substrate before the epitaxial growth, and (ii) the haze level of the substrate surface after the epitaxial growth.

Accordingly, Applicants respectfully submit that the present invention is not rendered obvious by the proposed combination of cited prior art references.

In view of the foregoing, it is believed the present claims are patentable over the cited reference, and the present application now stands in condition for allowance. A Notice of Allowance is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Marc S. Weiner, Reg. No. 32,181 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By_____

MTC

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